A NEW LOOK AT URBAN SOILS -- NRCS VIRTUAL URBAN SOILS WORKGROUP

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Purpose of Workgroup

- Formed April 2000 by email using "technology needs assessment form"
- E-technology prototype for low cost & timely communication
- Increase efficiency & provide support for urban-related soil scientists

Membership & Format

- NRCS soil scientists at any level & location
- Voluntary participation with concurrence of supervisor
- Monthly teleconferences with information exchange by email and FAX
- Occasional workshops & field tours to review & finalize products

Products for Urban Soils Workgroup

- Maintain & upgrade Urban Soils Homepage through NSSC site
- Peer review & exchange existing urban soils information on committee subjects
- Market urban soils at NCSS Regional Work Planning Conferences
- Summarize activities in a "Technology News" article
- Provide "Urban Soil Technical Tips" for MO & NSSC newsletters
- Draft policy & procedure fact sheets on each committee subject
- Sponsor workshop with field tour & peer review
- Draft proposal for long-term urban soil monitoring sites
- Provide urban input for 2001 National NCSS Work Planning Conference
- Support members in developing technical papers for distribution in 2001-2003
- Plan urban input for 2006 International Meetings (IUSS) in Philadelphia

Priority Topics

- Urban Mapping Conventions
- Glossary for Urban Soil Taxonomy
- Compaction in Urban Areas
- Soil Contamination & Relative Risk
- Educational Materials in Urban Soils
- Working with Grassroots Groups On-Site
- Urban Soil Quality Assessment Kit
- Community Gardens
- NRCS Urban Soil Homepage
- Urban Interpretations
- Stormwater Management
- Soil Slip Potential
- Riparian Buffers

THREE COMMITTEES -- THREE FOCAL AREAS

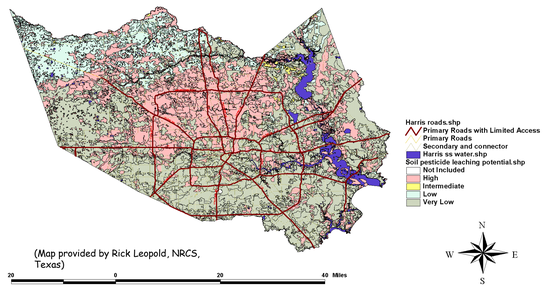
Contamination & Safety

(Luis Hernandez, Chairperson)

Community gardens in urban areas pose risk to consumers. Heavy metals and other contaminant assessments are often not done before cities initiate urban garden projects.

What is soil contribution to pesticide absorption in urban areas?

Soil Pesticide Leaching Potential for Harris County Texas



(Map provided by Rick Leopold, NRCS, Texas)

This map was created by adding WIN-PST soil ratings to the digitized soil map table in ArcView. Maps were also generated for Soil Pesticide Solution Runoff and Soil Pesticide Adsorbed Runoff Potentials. More detailed maps could be generated for particular subdivisions, park and recreational areas, golf courses, etc. Of course this is only part of the pesticide loss puzzle; to fully utilize this data, it must be run against the pesticides being used in the particular area. Maps of the selected pesticide versus the soil loss potentials could then be developed and used as planning tools. The people we talked to in Houston were very interested in this output, as well as the pesticide interactions, because they are involved in a variety of environmental analyses for different government programs.

Compaction & Hydrology

(H. Chris Smith, Chairperson)

Central Park has over 20 million visitors per year. How do we manage soil compaction?

Suburban areas are mass-graded and topsoil is replaced on the surface. This "soil restoration" decreases infiltration and increases runoff.

(Photos provided by Luis Hernandez, NRCS, NY)

Many vegetation species (i.e. grasses) cannot grow on compacted soils decreasing the aesthetics of the lawn (A). Soil compaction costs millions of dollars in New York City parks (B).

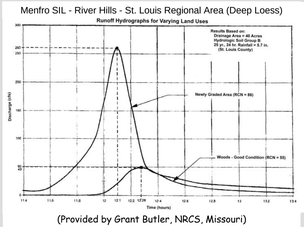
History Of The Great Lawn, Central Park, New York

Originally the site of a reservoir from 1842-1931, the Great Lawn was created in the 1930s as a pastoral landscape, with playgrounds at its northeast and northwest corners, and at its south end Belvedere Lake, now called Turtle Pond. Eight ball fields were added in the 1950s.

Intense use and poor drainage resulted in the severe deterioration of the Great Lawn. Erosion from the lawn deposited in Turtle Pond over the years, endangering an important habitat for the Park's aquatic wildlife and birds. In October 1995, the Central Park Conservancy and the City of New York Parks & Recreation embarked on the 55-acre restoration of the Great Lawn. The two-year, $18.2 million project included the 13-acre lawn and its 8 ball fields, Turtle Pond, and surrounding landscapes from 79th Street to 86th Street between the East and West Drives.

(Photo provided by Luis Hernandez, NRCS, NY)

Soil compaction decreases permeability and increases runoff in Flushing Meadows, Queens, NY.



(Provided by Grant Butler, NRCS, Missouri)

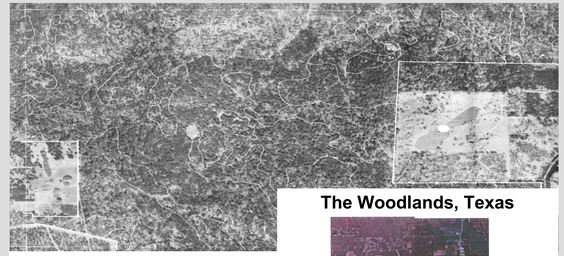
Increased soil compaction in newly graded urban areas results in a 5-fold increase in runoff compared to forested areas on the same soil type. Graph of changes in compaction with land use.

Mapping Conventions & Interpretations

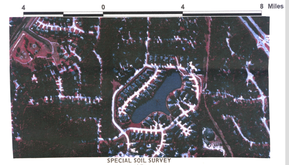
(Joyce Scheyer, Chairperson)

What is the appropriate scale for mapping urban soils?

Can soil map units in urban areas be developed to recognize heavy metal concentrations?



The Woodlands, Texas



SPECIAL SOIL SURVEY OF THE WOODLANDS MONTGOMERY COUNTY, TEXAS
U. S. DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE
IN COOPERATION WITH
HOUSTON LIGHTING AND POWER COMPANY, THE
MONTGOMERY-WALKER SOIL AND WATER CONSERVATION DISTRICT
AND THE TEXAS AGRICULTURAL EXPERIMENT STATION

A special soil survey was conducted in 1972 & 1973 on a 17,000-acre development. The development, the Woodlands, is located about 8 miles south of Conroe, Texas, and 28 miles north of downtown Houston in Southern Montgomery County.

The Woodlands soil survey was completed to aide in the development and evaluation of alternatives to properly use land with consideration of environmental values and economic factors. The information in this soil survey is applicable to developments such as housing projects, highway and street construction, recreation and open-space planning, and locations for light industries.

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Poster assembled by Janet Bauer and Tammy Nepple, NSSC, Lincoln, Nebraska.